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## CS151P

### The Impact of COVID-19 on the Provision of Adult Cardiac Surgery at a Dedicated COVID-19 Hospital in Australia

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**Background:** Internationally, the response to the COVID-19 pandemic has resulted in fewer cardiac surgical procedures being performed and an increase in the proportion of non-elective cases. To date there has been no study examining the impact of COVID-19 on the provision of cardiac surgery in Australia. This study aimed to evaluate the impact that the COVID-19 pandemic has had on the provision of cardiac surgery in a single, large, major cardiac centre and dedicated COVID-19 hospital. A retrospective cohort study was undertaken utilising prospectively collected data.

**Method:** Prospectively collected patient and operative data were examined to assess whether there was a reduction in the number of cases performed and whether there was a difference in patient demographics, surgical procedures, or case urgency. Data were examined from the period of COVID-restrictions in 2020 and compared with data from the same period in 2019.

**Results:** From 3 March 2020 to 30 June 2020, 136 adults underwent cardiac surgery at this institution, representing an overall reduction in operative caseload of 21%. The largest impact was noticed in May and April and coincided with state-wide restrictions on elective surgery. Surgical acuity was unchanged, with 58% of operations classified as non-elective procedures performed during the index admission. There was a small non-significant increase in the proportion of isolated coronary artery bypass surgery and aortic valve surgeries performed.

**Conclusion:** From March to June 2020 this local hospital's response to the COVID-19 pandemic resulted in a reduction in cardiac surgery service delivery. No change was seen in the urgency or type of surgeries performed.

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## CS152P

### The Six-Minute Walk Test Distance at Time of Hospital Discharge All-Cause Mortality Following Cardiac Surgery

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**Background:** To determine the association between the distance walked during the 6-minute walk test (6mWT) immediately prior to hospital discharge following cardiac surgery and the risk of all-cause mortality.

**Method:** A total of 1,127 patients (mean age 64.2 years, 25.3% female) who underwent cardiac surgery were included. All patients underwent a standardised physiotherapist-supervised inpatient rehabilitation program during the period 2007–2017. The 6mWT was performed before hospital discharge. This study calculated the percentage of the predicted 6mWT distance, and the lower limit of normal distance, based on each patient's age, sex, and body mass index. The patients were followed up for all-cause mortality by electronic linkage to death registration data. Cox regression was used to estimate multivariable-adjusted hazard ratios (HRs) for all-cause mortality.

**Results:** Patients walked a mean (SD) distance of 359 (99) m during the 6mWT at the time of hospital discharge. During a median follow-up of 6.4 (IQR 3.5–9.2) years, 169 (15%) patients died. There was a strong and independent inverse relationship between 6mWT distance and all-cause mortality (HR per 10 m increase 0.96; 95% CI 0.94–0.98;  $p < 0.001$ ). Patients in the third tertile (best performers) of the percent-age-predicted 6mWT had a lower hazard of all-cause mortality (HR 0.51; 95% CI 0.33–0.79) than patients in the first (lowest) tertile. Patients who completed the theoretical lower limit of the normal 6mWT distance had a lower hazard of mortality (HR 0.64; 95% CI 0.45–0.92) than those who did not complete this limit.

**Conclusion:** A greater distance walked during the 6mWT before hospital discharge was strongly and independently associated with a lower hazard of all-cause mortality.

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## CS153P

### The Susceptibility of the Aortic Root: Porcine Aortic Rupture Testing Under Cardiopulmonary Bypass

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**Background:** An earlier study on the functional limits of the aneurysmal aortic root determined that a pig root is susceptible to failure at high aortic pressures levels. This study established a pig rupture model using cardiopulmonary bypass to determine the most susceptible region of the aortic root under the highest pressures achievable using continuous flow, and what changes occur in these regions on macroscopic and histological levels. This information may help guide clinical management of aortic root and ascending aorta pathology.

**Method:** Five pigs underwent four-dimensional flow magnetic resonance imaging (MRI) before surgery to determine vasopressor-induced wall shear stress (WSS) and flow parameters. All pigs were then placed on cardiopulmonary bypass (CPB) via median sternotomy, and maximal aortic root and ascending aorta flows were initiated until rupture or failure, to determine the most susceptible region of the aorta. The heart was explanted and histologically analysed to determine whether histological changes mirror the macroscopic observations.